IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: James M. Thommes

For : Method And Apparatus For Receiving A Universal Input Voltage In A Welding Power Source

Attorney Docket No. : ITW 7188C

PRELIMINARY AMENDMENT

Honorable Commissioner of
Patents and Trademarks
Washington, D. C. 20231

Dear Sir:

Prior to the issuance of the first Office Action please amend the above-referenced application as follows:

In the Drawing:

Please add new Figure 6, shown on an attached sheet.

In the Specification:

Please replace the paragraph beginning at line 15, page 6 with the following rewritten paragraph:

Figure 4 is a detailed diagram of the pulse width modulator of Figure 1;

Please replace the paragraph beginning at line 17, page 16 with the following rewritten paragraph:

Figure 5 is a control circuit for the auxiliary power controller of the present invention; and

Please insert the following paragraph after line 18, page 6:

Figure 6 is a block diagram of an alternative embodiment in accordance with the present invention.

Please replace the paragraph beginning at line 5, page 13 with the following rewritten paragraph:

In an alternative embodiment the output of PWM 103 may be rectified by other output rectifiers such as a synchronous rectifier (cycloconverter) that provides an ac output signal at a frequency less than or equal to the frequency of the output of PWM 103. Other output circuits, including an inverter 601 (See Figure 6), that provide a welding current may also be used.

In the Claims:

Please cancel claims 1-24 and add the following new claims 25-39.

25. A welding, cutting or heating power source, comprising:

an input rectifier configured to receive an ac input and to provide a first dc signal;

a converter configured to receive the first dc signal and to provide a converter output, and configured to receive at least one control input;

an output circuit configured to receive the converter output and to provide a welding, heating or cutting signal; and

a controller, including a power factor correction circuit, configured to provide at least one control signal to the converter.

Amendments:

On line 1 of the cross-reference to related application section, following "This is" insert --a continuation of, and claims the benefit of the filing date of, U.S. Patent Application Serial No. 09/200,058, filed November 25, 1998, entitled Method And Apparatus For Receiving A Universal Input Voltage In A Welding Power Source, which is --

Please cancel claim(s) 1-24 of the application as filed prior to calculating the filing fee.

A preliminary amendment is enclosed.

Assignment

Copendency of Prior Application:

The prior application is presently pending.

Power of Attorney:

The Power of Attorney in the grandparent application was changed to the undersigned and a copy of the New Power of Attorney is enclosed.

26. The apparatus of claim 25, further including an auxiliary power source capable of providing a control power signal at a preselected control signal voltage, regardless of the magnitude of the ac input signal.

27. The apparatus of claim 26, wherein the auxiliary power source includes an auxiliary transformer with a plurality of primary taps.

28. The apparatus of claim 25, wherein the converter includes a boost circuit.

29. The apparatus of claim 25, wherein the output circuit includes a pulse width modulator.

30. The apparatus of claim 29, wherein the converter includes a boost circuit.

31. The apparatus of claim 25, wherein the output circuit includes an inverter.

32. The apparatus of claim 25 wherein the output circuit includes a rectifier.

33. The apparatus of claim 25 wherein the output circuit includes a cycloconverter.

34. A method of providing a welding, cutting or heating current, comprising:

converting and power factor correcting an ac input signal to a second ac signal; and

changing the second ac signal into a third signal having a current suitable for welding, cutting or heating.

35. The method of claim 34, wherein converting the ac input signal includes boost converting the ac signal.

36. The method of claim 34 further including providing control signals to the converter.

37. The method of claim 34, further including providing auxiliary power signal by transforming the ac input signal.

38. The method of claim 34, wherein changing includes pulse width modulating.

39. The method of claim 34, wherein changing includes inverting.

40. A welding, cutting or heating power source, comprising:

rectifier means for receiving an ac input providing a first dc signal;

converter means for receiving the first dc signal and providing a converter output;

control means for controlling the converter means, wherein the control means includes a power factor correction means for power factor correction, connected to the converter means;

output means for receiving the converter output and providing a welding, heating or cutting signal.

41. The apparatus of claim 40, wherein the converter means includes a boost circuit.

42. The apparatus of claim 42, wherein the output means includes a pulse width modulator.

43. The apparatus of claim 40, wherein the output circuit includes an inverter.

44. The apparatus of claim 40 wherein the output circuit includes a rectifier.

45. A weldment or metal cut formed by a process which comprises:

converting and power factor correcting an ac input signal to a second ac signal; and

changing the second ac signal into a third signal having a current suitable for welding or cutting.

REMARKS

This preliminary amendment places the application in a better condition for examination. The Applicant(s) respectfully submit that no new matter has been added.

New Claim 25 is similar to allowed claim 1 of the parent application, with the following changes. The preamble language directed to the range of voltages input has been deleted and the output of the power factor correcting converter is provided to an output circuit. Applicants respectfully submit that the claims are patentable. Support for providing the converter output to an output circuit is provided at page 13, lines 5-11 of the specification.

Various dependent claims describe the output circuit as an inverter. Support for having an inverter as the output circuit is provided at page 13, line 9-11. New Figure 6 shows the system with an inverter output circuit as described on page 13, lines 9-11, which has been amended to refer to Figure 6.

The remaining independent generally have a limitation directed to power factor correcting and providing a welding or cutting output.

Respectfully Submitted

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